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EXAMINER	
SURVILLO, OLEG	
ART UNIT	PAPER NUMBER
2442	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/695,928	RODRIGUEZ, PABLO R.	
	Examiner	Art Unit	
	OLEG SURVILLO	2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24,26-33 and 35* is/are pending in the application.

4a) Of the above claim(s) *1-9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-24,26-33 and 35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 10-24, 26-33, and 35 are pending in the application. Claims 10 and 23 are currently amended. Claims 25 and 34 remain canceled. No new claims are added. Claims 1-9 remain withdrawn from consideration as a result of an earlier restriction requirement.

Response to Arguments

2. With regard to the Applicant's remarks dated September 10, 2008:

regarding the rejection of claims 10, 12-14, 16-23, and 26-33 under 35 U.S.C. 103(a) as being unpatentable over Viswanath et al. in view of Chebrolu, in view of Rodriguez, and in further view of Greer et al., Applicant's arguments have been fully considered but they are not persuasive.

Applicants argue at page 14 of 19 of Remarks that: *"...Examiner later goes on to contradict himself by equating Applicants' "objects in a virtual resource" to Chebrolu's "packet" (OA, pg. 6)..."*. The Examiner disagrees. Chebrolu's "packet" was not equated to Applicants' "object in a virtual resource" at page 6 of the last OA, as evidenced by the last sentence at the same page that reads: "Viswanath in view of Chebrolu does not explicitly show determining a number of objects in the virtual resource, wherein the virtual resource comprises a plurality of objects". Also, the limitations of "assigning each object to at least one available wireless network interface" and "transmitting an outgoing request for each object" are intentionally written at page 6 of the last OA to omit the

word “object”, replacing it with the word “packet” in brackets, indicating that Chebrolu teaches “packets” instead of “objects”. For comparison, at page 7 of the last OA, claimed “object” is equated with Rodriguez’s “blocks”, as evidenced by having word "blocks" in brackets next to word "objects". Nevertheless, Applicants’ acknowledgement at page 14 of 19 of Remarks that: *“an "object" can be represented in one or more “packet” for transmission over a network”* is noted with appreciation.

Applicants further argue at page 16 of 19 of Remarks that: *“Chebrolu defines “packets” as data packets such as those commonly sent over networks..."* and submit that: *“…Chebrolu’s “packets” are not the same as Applicants’ “objects in a virtual resource”.”*. This argument is not persuasive for the same reasons as those discussed above. In addition, this argument is not persuasive because Applicants failed to provide a specific definition of “objects in a virtual resource” that would provide an evidence of a structural and functional difference over Chebrolu’s “packet”. It is further noted that if Chebrolu could be relied on to explicitly teach the limitation of “objects in the virtual resource”, then reliance on Rodriguez would not have been made, as it would be unnecessary and redundant.

Applicants further argue that: *"even if, arguendo, Applicants' objects were considered to be Chebrolu's "packets", Chebrolu still does not teach, "transmitting an outgoing request for each [packet], wherein each outgoing request specifies the available wireless network interface assigned to the corresponding [packet], and wherein the [packets] are requested via a plurality of available wireless network interfaces"."*. This argument is not persuasive because it amounts to a general

allegation that the claim defines a patentable invention without specifically pointing out how the language of the claim patentably distinguishes it from the reference(s).

As to any arguments not specifically addressed, they are the same as those discussed above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 10, 12-14, 16-23, and 26-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Viswanath et al. (US 2007/0118670 A1) in view of an article "Communication using Multiple Wireless Interfaces" by Kameswari Chebrolu et al. (hereinafter Chebrolu) in view of an article "Dynamic Parallel Access to Replicated Content in the Internet" by Pablo Rodriguez et al. (hereinafter Rodriguez) and in further view of Greer et al. (US Patent No.: 5,978,828).

As to claim 10, the preamble has been given patentable weight since the claim body refers back to the preamble. See "the virtual resource" at line 1 of the body.

As to claim 10, Viswanath shows:

receiving, from a computing device [mobile node (12)], an incoming request [mobile node requests access to data services] (par. [0011]);

determining a number of available wireless network interfaces [determining a number of available gateway GPRS support nodes (20) that provide an access to a particular network among the plurality of networks] (par. [0021]), each of the available wireless network interfaces communicatively coupled to a distinct wireless network of a plurality of wireless networks [each gateway GPRS support node (20) is communicatively coupled to a distinct wireless network (16)] (Fig. 1); and

transmitting an outgoing request, wherein each outgoing request specifies the available wireless network interface [load balancing requests among gateways (20), wherein each outgoing request includes the IP address of selected gateway] (par. [0016] and [0041]).

Viswanath does not explicitly show retrieving a virtual resource from a remote computer using a plurality of wireless network interfaces. In particular, Viswanath does not explicitly show the remote computer that is communicatively coupled to the plurality of wireless networks, determining a number of objects in the virtual resource, wherein the virtual resource comprises a plurality of objects, and assigning each object in the virtual resource to at least one available wireless network interface, at least one object in the virtual resource being assigned to a different available wireless network interface than another object in the virtual resource.

Chebrolu shows a method for retrieving data [packets] from a remote computer [remote host] (Fig. 1) using a plurality of wireless network interfaces (fig. 1; throughout the reference), comprising:

determining a number of available wireless network interfaces, each of available wireless network interfaces communicatively coupled to a distinct wireless network of a plurality of wireless networks that a communicatively coupled to the remote computer (fig. 1; page 327 under sections I. Introduction and II. Architectural Details);

assigning each [packet] to at least one available wireless network interface (page 328 section IV. Scheduling Algorithm), at least one [packet] being assigned to a different available wireless network interface than another [packet] (page 329 section VI. Simulation Results), wherein the [packets] are requested via a plurality of the available wireless network interfaces (page 327 section II. Architectural Details); and

transmitting an outgoing request for each [packet], wherein each outgoing request specifies the available wireless network interface assigned to the corresponding [packet] (page 328 under the section IV. Scheduling Algorithm), and wherein the [packets] in the virtual resource are requested via a plurality of available wireless network interface (page 327 under the section I. Introduction).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Viswanath by retrieving requested data from a remote computer using a plurality of wireless network interfaces. In particular, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the remote computer that is communicatively coupled to the plurality of wireless networks, and assigning each packet of the resource to at least one available wireless network interface, at least one packet being assigned to a different available wireless network

interface than another packet in order to aggregate the bandwidth offered by the individual networks (abstract of Chebrolu).

Viswanath in view of Chebrolu does not explicitly show determining a number of objects in the virtual resource, wherein the virtual resource comprises a plurality of objects.

Rodriguez shows a method for retrieving a virtual resource [document] from a remote computer [server] using a plurality of [multiple TCP connections in parallel] (throughout the reference), comprising:

determining a number of objects [blocks] in the virtual resource, wherein the virtual resource comprises a plurality of objects (pages 457 col. 2 and 458 col. 1 under the section III. Dynamic Parallel Access); and

assigning each object in the virtual resource to at least one available [TCP parallel connection], at least one object in the virtual resource being assigned to a different available [TCP parallel connection] than another object in the virtual resource (page 455 col. 2 under the section I. Introduction).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Viswanath in view of Chebrolu with those of Rodriguez, as discussed just above in order to retrieve different portions of the requested resource using multiple TCP connections in parallel and reassemble retrieved portions locally (abstract of Rodriguez, section V. Dynamic Parallel Access versus Parallel Access to a single Server).

Alternatively to, or in combination with Rodriguez, Greer shows that the virtual resource [such as a web page] comprises a plurality of objects (Fig. 3 and 4). Greer also shows determining a number of objects in the virtual resource [sending a request to a server for information about a web page] (col. 8 lines 30-35), wherein the response message from the server includes the number of objects in the virtual resource and the size of each object (Figure 6; col. 4 lines 18-20).

It would have been obvious to one of ordinary skill in the art to modify the method of Viswanath in view of Chebrolu and in further view of Rodriguez by having a virtual resource comprising a plurality of objects and determining a number of objects in the virtual resource in order to efficiently partition the virtual resource from a single document onto multiple links (page 328 section IV. Scheduling Algorithm in Chebrolu).

As to claim 12, Viswanath shows that determining a number of available wireless network interfaces comprises monitoring one or more characteristics of a wireless network interface [monitoring the existence of gateways by formulating a list (32) of gateways] (par. [0021]).

As to claim 13, Viswanath in view of Chebrolu, Rodriguez and in further view of Greer shows that determining a number of available wireless network interfaces comprises monitoring one or more characteristics of a wireless network interface, wherein a signal characteristic is selected from the group of signal characteristics consisting of: signal-to-noise ratio, available bandwidth, congestion, signal strength,

connection cost, and bit error rate (Chebrolu, page 328 under section III. Interface Selector Algorithm).

As to claim 14, Viswanath shows that determining a number of available wireless network interfaces comprises monitoring one or more characteristics of a wireless interface stored in a data table in memory [formulating a list of gateways that link to the identified APN] (par. [0021]).

As to claim 16, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows that determining a number of objects in the virtual resource comprises querying the remote computer (Fig. 10; col. 8 lines 30-35 in Greer).

As to claims 17 and 30, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows that assigning each object to at least one available network interface comprises assigning an object to two or more available network interfaces if the size of the object exceeds a threshold (page 455 col. 2 lines 5-7, 17-20, 29-30; page 456 col. 1 lines 15-23; section III. Dynamic Parallel Access - all in Rodriguez).

As to claims 18 and 31, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows that assigning each object to at least one available network interface comprises assigning an object to two or more available network interfaces if the size of the object exceeds a threshold, wherein the threshold is a function of the

bandwidth of available wireless network interfaces (page 455 col. 2 lines 5-7, 17-20, 29-30; page 456 col. 1 lines 15-23; section III. Dynamic Parallel Access - all in Rodriguez; page 328 section III. Interface Selector Algorithm in Chebrolu).

As to claims 19 and 32, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows that assigning each object to at least one available network interface comprises assigning an object to two or more available network interfaces if the size of the object exceeds a threshold, wherein the threshold is a function of the size of an object relative to the size of other objects in the virtual resource (page 455 col. 2 lines 5-7, 17-20, 29-30; page 456 col. 1 lines 15-23 section III. Dynamic Parallel Access - all in Rodriguez; page 328 section III. Interface Selector Algorithm in Chebrolu).

As to claim 20, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows:

receiving objects over the plurality of assigned wireless network interfaces (page 329 section VI. Simulation Results in Chebrolu); and

collating the received objects to construct the virtual resource (page 455 col. 2 lines 7-9 in Rodriguez).

As to claim 21, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows transmitting the virtual resource to the computing device that originated the incoming request (page 455 col. 2 lines 5-10 in Rodriguez).

As to claim 22, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows a computer-readable medium having computer-executable instructions that is capable of performing the method recited in claim 10 (claims 42-49 in Viswanath).

As to claim 23, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows:

at least one local communication network interface [serving GPRS Support Node (18)] (Fig. 1 in Viswanath) for receiving a request for a virtual resource, wherein the virtual resource comprises a plurality of objects (as discussed per claim 10);

a plurality of wireless network interfaces [Gateway GPRS support nodes (20)] (Fig. 1 in Viswanath; also Fig. 1 in Chebrolu);

a memory module (104) (Fig. 2 in Viswanath); and

a processor (102) (Fig. 2 in Viswanath) executing logic instructions that configure the processor to perform the method steps of claim 10, as discussed above.

As to claim 26, Viswanath shows that the processor polls the wireless network interfaces to determine characteristics of the communication connections managed by the wireless network interfaces [formulating a list (32) of gateways (20) that link to the identified APN] (par. [0021]) [and keeping a record of gateways that recently served requests in round-robin approach] (par. [0033]).

As to claim 27, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows that the processor polls the wireless network interfaces on a periodic basis to determine characteristics of the communication connections managed by the wireless network interfaces (page 455 col. 2 lines 20-23 in Rodriguez; section VI. Simulation Results in Chebrolu).

As to claim 28, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows that the processor polls the wireless network interfaces in response to a received request to determine characteristics of the communication connections managed by the wireless network interfaces (page 455 col. 2 lines 30-38 in Rodriguez; section VI. Simulation Results in Chebrolu).

As to claim 29, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows that the processor assigns objects to wireless network interfaces according to an algorithm that maximizes bandwidth (page 455 col. 2 lines 42-48 and page 456 col. 1 lines 1-10 in Rodriguez; section III. Interface Selector Algorithm in Chebrolu).

As to claim 33, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows that the processor is further configured to receive requested objects

transmitted across at least some of the plurality of wireless networks (page 329 section VI. Simulation Results in Chebrolu).

5. Claims 11 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Viswanath et al. in view of Chebrolu et al., in view of Rodriguez et al., in view of Greer et al. and in further view of Boehm (US 2004/0085944 A1).

As to claim 11, Viswanath shows that receiving the incoming request for the virtual resource comprises receiving the incoming request from a computing device over a radio access network (Fig. 1).

Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer does not explicitly show that the incoming request for the virtual resource comprises receiving the incoming request from a computing device over a local communication network.

Boehm shows that the incoming request for the virtual resource comprises receiving the incoming request from a computing device over a local communication network (par. [0020], Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer by receiving the incoming request from a computing device over a local communication network in order to receive requests from computing devices locally connected to the portable Wireless Internet gateway (Fig. 3, par. [0020] in Boehm).

As to claim 24, Viswanath shows that the at least one local communication network interface comprises a wireless network interface [Serving GPRS Support Node (18)] (Fig. 1) that communicates with mobile devices (12) over a Radio Access Network (24) (Fig. 1).

Alternatively, Boehm shows that the at least one local communication network interface comprises a wireless network interface [a portable gateway (315)] (Fig. 3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer by having the at least one local communication network interface comprises a wireless network interface in order to enable wireless communication with mobile devices.

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Viswanath et al. in view of Chebrolu et al., Rodriguez et al., and in further view of Greer et al. and in further view of Nelson (US 2003/0055975 A1).

As to claim 15, Viswanath shows querying local domain name server (30) for a list of available wireless network interfaces.

Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer does not explicitly show that determining a number of available wireless network interfaces comprises querying the wireless interfaces.

Nelson shows that determining a number of available wireless network interfaces comprises querying the wireless interfaces (par. [0083]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer by having determining a number of available wireless network interfaces comprise querying the wireless interfaces in order to verify that a selected wireless network interface is currently available to handle the request.

7. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Viswanath et al. in view of Chebrolu et al, in view of Rodriguez et al., in view of Greer et al. and in further view of Holder (US 2003/0208554 A1).

As to claim 35, Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer shows the processor being further configured to receive requested objects transmitted across at least some of the plurality of wireless networks (section II. Architectural details in Chebrolu).

Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer does not explicitly show the processor configured to transmit received objects over the local communication network interface.

Holder shows that the processor is configured to transmit received objects over the local communication network interface (par. [0004] and [0025]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Viswanath in view of Chebrolu, Rodriguez, and in further view of Greer by having the processor being configured to transmit received

virtual resources over the local communication network interface in order to enable the requesting client to receive response to the request.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG SURVILLO whose telephone number is (571)272-9691. The examiner can normally be reached on M-Th 8:30am - 6:00pm; F 8:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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